

California Public
Utilities Commission
SYCAMORE-PEÑASQUITOS
230-KV TRANSMISSION
LINE PROJECT
Draft Environmental
Impact Report

State Clearinghouse No. 2014081031

VOLUME I: Executive Summary –
4.6 Hydrology and Water Resources

SEPTEMBER 2015



PANORAMA
ENVIRONMENTAL, INC.

California Public Utilities Commission
**SYCAMORE-PEÑASQUITOS 230-KV
TRANSMISSION LINE PROJECT**
Draft Environmental Impact Report
State Clearinghouse No. 2014081031

VOLUME I: Executive Summary – 4.6 Hydrology and Water Resources

SEPTEMBER 2015

Prepared for:

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Prepared by:

Panorama Environmental, Inc.
One Embarcadero Center, Suite 740
San Francisco, CA 94111
650-373-1200
laurie.hietter@panoramaenv.com

PANORAMA
ENVIRONMENTAL, INC.

TABLE OF CONTENTS

VOLUME I

Acronyms and Abbreviations

Glossary

ES	Executive Summary	ES-1
ES.1	Introduction	ES-1
ES.1.1	CPUC Conclusion Regarding Environmentally Superior Alternative.....	ES-1
ES.1.2	No Project Alternative	ES-3
ES.1.3	Contents of the Draft EIR	ES-3
ES.2	Background and Description of Proposed Project	ES-4
ES.2.1	Project Background.....	ES-4
ES.2.2	Project Location and Right of Way	ES-4
ES.2.3	Proposed Project.....	ES-5
ES.3	Proposed Project OBJECTIVES	ES-7
ES.3.1	SDG&E's Project Objectives	ES-7
ES.3.2	California Public Utilities Commission Project Objectives	ES-7
ES.4	Summary of Public Involvement Activities.....	ES-9
ES.4.1	Scoping Process	ES-9
ES.4.2	Areas of Controversy/Public Scoping Issues.....	ES-10
ES.5	Project Alternatives	ES-11
ES.5.1	CEQA Requirements for Selection of Alternatives	ES-11
ES.5.2	Alternatives Fully Evaluated in the EIR	ES-12
ES.5.3	Alternatives Eliminated from Further Consideration	ES-18
ES.5.4	No Project Alternative	ES-19
ES.6	Summary of Impacts	ES-20
ES.6.1	Introduction	ES-20
ES.6.2	Biological Resources.....	ES-25
ES.6.3	Aesthetics.....	ES-27
ES.6.4	Cultural Resources	ES-29
ES.6.5	Paleontological Resources.....	ES-30
ES.6.6	Geology, Soils, and Mineral Resources	ES-32
ES.6.7	Hydrology and Water Resources.....	ES-34

TABLE OF CONTENTS

ES.6.8	Transportation and Traffic.....	ES-36
ES.6.9	Noise	ES-38
ES.6.10	Land Use and Planning.....	ES-40
ES.6.11	Recreation	ES-40
ES.6.12	Hazards and Hazardous Materials	ES-42
ES.6.13	Fires and Fuels Management	ES-44
ES.6.14	Air Quality	ES-46
ES.6.15	Greenhouse Gases.....	ES-48
ES.6.16	Agriculture and Forestry Resources	ES-49
ES.6.17	Population and Housing	ES-51
ES.6.18	Utilities and Public Service Systems	ES-51
ES.7	Cumulative Impacts.....	ES-53
ES.7.1	Cumulative Impacts	ES-53
ES.7.2	Cumulative Project Mission—Peñasquitos 230-kV Transmission Line	ES-53
ES.7.3	Summary of Cumulative Impacts.....	ES-54
ES.8	Comparison of the Proposed Project and Alternatives	ES-61
ES.8.1	Methodology for Alternatives Comparison	ES-61
ES.8.2	Identify Environmentally Superior Alternative.....	ES-62
ES.8.3	Comparison of Proposed Project and the Alternatives.....	ES-63
ES.8.4	Conclusion of the Environmentally Superior Alternative	ES-68
ES.9	Comparison of the Proposed Project with the No Project Alternative	ES-68
ES.9.1	Summary of Impacts	ES-68
ES.9.2	Conclusion	ES-69
ES.10	Impact Summary and Mitigation Table	ES-69
1	Introduction	1-1
1.1	Overview of the Proposed Project.....	1-1
1.1.1	Project Location.....	1-1
1.1.2	Project Summary	1-1
1.1.3	SDG&E's Project Objectives	1-4
1.1.4	California Public Utilities Commission Project Objectives	1-4
1.1.5	Electrical System and Loading	1-6
1.2	Environmental Review Process	1-8
1.2.1	CEQA Process and Lead Agency.....	1-8
1.2.2	Environmental Analysis.....	1-9
1.3	Agency Use of this Document.....	1-9
1.3.1	California Public Utilities Commission Process	1-9
1.3.2	State Trustee and Responsible Agencies	1-10
1.3.3	Federal Agencies.....	1-10

TABLE OF CONTENTS

1.3.4	Required Permits and Approvals.....	1-10
1.4	Public Review and Comment	1-12
1.4.1	Scoping	1-12
1.4.2	How to Comment on the Draft EIR.....	1-15
1.5	Reader's Guide to this Draft EIR	1-15
1.5.1	CEQA Process and Lead Agency.....	1-15
1.6	References.....	1-17
2	Project Description.....	2-1
2.1	Introduction	2-1
2.1.1	Existing Transmission Infrastructure.....	2-1
2.2	Proposed Project Components.....	2-2
2.2.1	Right-of-Way Requirements.....	2-12
2.2.2	Description of Components	2-12
2.2.3	Transmission Line Segment A: Sycamore Canyon Substation to Carmel Valley Road	2-20
2.2.4	Transmission Line Segment B: Carmel Valley Road	2-27
2.2.5	Transmission Line Segment C: Carmel Valley Road to Peñasquitos Junction	2-29
2.2.6	Transmission Line Segment D: Peñasquitos Junction to Peñasquitos Substation	2-32
2.2.7	Substation and Other Modifications	2-35
2.3	Construction Activities and Procedures.....	2-35
2.3.1	Safety and Environmental Awareness Program	2-35
2.3.2	Summary of Land Disturbance	2-36
2.3.3	Temporary Work Areas.....	2-37
2.3.4	Access Roads	2-44
2.3.5	Overhead Transmission	2-46
2.3.6	Underground Transmission	2-49
2.3.7	Substations and Encina Hub	2-51
2.3.8	Helicopter Use Plan.....	2-52
2.3.9	Water Use	2-56
2.3.10	Traffic Management	2-56
2.3.11	Site Cleanup and Waste Disposal	2-57
2.3.12	Workforce and Equipment	2-60
2.3.13	Construction Schedule	2-70
2.4	Operation and Maintenance.....	2-71
2.4.1	Aboveground Facilities (Transmission Line Segments A, C, and D; Substations)	2-71
2.4.2	Underground Facilities (Transmission Line Segment B)	2-72

TABLE OF CONTENTS

- 2.4.3 Substations 2-72
- 2.5 Applicant Proposed Measures 2-73
 - 2.5.1 Applicant Proposed Measures 2-73
- 2.6 Electric and Magnetic Fields 2-85
 - 2.6.1 Overview 2-85
 - 2.6.2 Defining Electric and Magnetic Fields..... 2-85
 - 2.6.3 Scientific Background and Regulations Applicable to EMF 2-87
 - 2.6.4 Policies, Standards, and Regulations..... 2-91
 - 2.6.5 EMF Data Applicable to the Proposed Project..... 2-93
 - 2.6.6 SDG&E's Proposed EMF Mitigation..... 2-95
 - 2.6.7 EMF Data Applicable to Alternatives 2-97
- 2.7 References..... 2-97
- 3 Alternatives..... 3-1**
 - 3.1 Introduction 3-1
 - 3.2 Alternatives Development and Screening Process 3-1
 - 3.2.1 California Environmental Quality Act Requirements..... 3-2
 - 3.3 Alternatives Screening Methodology..... 3-3
 - 3.3.1 Consistency with Project Objectives 3-3
 - 3.3.2 Feasibility 3-5
 - 3.3.3 Potential to Eliminate Significant Environmental Effects..... 3-7
 - 3.3.4 Public Utilities Code Considerations for Alternatives..... 3-7
 - 3.4 Summary of Alternatives Considered..... 3-8
 - 3.5 Alternatives Retained for EIR Analysis..... 3-17
 - 3.5.1 Alternative 1: Eastern Cable Pole Option 1b at Carmel Valley Road (SDG&E Application; CPUC) 3-17
 - 3.5.2 Alternative 2a and 2b: Eastern Cable Pole at Pole P40 and Underground Alignment through City Open Space or City Water Utility Service Road (CPUC) 3-20
 - 3.5.3 Alternative 3: Los Peñasquitos Canyon Preserve-Mercy Road Underground (Sunrise Powerlink EIR/EIS) 3-21
 - 3.5.4 Alternative 4: Segment D 69-kV Partial Underground Alignment (Public Scoping) 3-27
 - 3.5.5 Alternative 5: Pomerado Road to Miramar Area North Combination Underground/Overhead (Sunrise Powerlink EIR/EIS) 3-33
 - 3.5.6 No Project Alternative 3-37
 - 3.6 Alternatives Eliminated from Full EIR Analysis 3-46
 - 3.6.1 Alternative 1a: Eastern Cable Pole Option at Carmel Valley Road (SDG&E Application) 3-46
 - 3.6.2 Alternative 6: Eastern Cable Pole Option 2 (SDG&E Application) 3-47
 - 3.6.3 Alternative 7: Western Cable Pole Alternative (SDG&E Application) 3-47

TABLE OF CONTENTS

3.6.4 Alternative 8: Segment A Pole Relocations (CPUC)..... 3-49

3.6.5 Alternative 9: Segment D Pole Relocations South of Existing Line
(Public Scoping; CPUC) 3-49

3.6.6 Alternative 10: Northern Alignment Number 1 (SDG&E Application/PEA) . 3-51

3.6.7 Alternative 11: Northern Alignment Number 2 (SDG&E Application/PEA) . 3-51

3.6.8 Alternative 12: Northern Alignment Number 3 (SDG&E Application/PEA) . 3-52

3.6.9 Alternative 13: Northern Alignment Number 4 (SDG&E Application/PEA) . 3-55

3.6.10 Alternative 14: Southern Alignment Number 5 (SDG&E Application/PEA) . 3-56

3.6.11 Alternative 15: Southern Alignment Number 6 (SDG&E Application/PEA) . 3-56

3.6.12 Alternative 16: Underground Alignment Number 7
(SDG&E Application/PEA) 3-57

3.6.13 Alternative 17: Stonebridge—Mira Mesa Alignment (CPUC) 3-58

3.6.14 Alternative 18: Los Rosas—Park Village Alignment (CPUC) 3-58

3.6.15 Alternative 19: Sunrise Coastal Link Alignment (Sunrise Powerlink EIR/EIS) . 3-59

3.6.16 Alternative 20: Pomerado Road to Miramar Area North-Combination
Underground/Overhead Alternative (Sunrise Powerlink EIR/EIS)..... 3-59

3.6.17 Alternative 21: Mannix—Dormouse Road Alternative
(Sunrise Powerlink EIR/EIS) 3-60

3.6.18 Alternative 22: SDG&E Segment 13 Scripps Ranch Alternative
(Sunrise Powerlink EIR/EIS) 3-61

3.6.19 Alternative 23: MCAS Miramar-Underground/Overhead Alternative
(Sunrise Powerlink EIR/EIS) 3-61

3.6.20 Alternative 24: MCAS Miramar-Combination Underground/Overhead
Alternative (Sunrise Powerlink EIR/EIS)..... 3-62

3.6.21 Alternative 25: Rancho Peñasquitos Boulevard Bike Path Alternative..... 3-62

3.6.22 Alternative 26: State Route 56 Alternative (Sunrise Powerlink EIR/EIS) 3-63

3.6.23 Alternative 27: Milepost 146.5 to Peñasquitos Substation Underground/
Consolidation Alternative (Sunrise Powerlink EIR/EIS) 3-63

3.6.24 Alternative 28: Scripps Poway Parkway to State Route 56 Alternative (Sunrise
Powerlink EIR/EIS)..... 3-63

3.6.25 Alternative 29: Scripps Poway Parkway—Pomerado Road Underground
Alternative (Sunrise Powerlink EIR/EIS)..... 3-64

3.6.26 Alternative 30: CAISO-Approved Mission—Peñasquitos 230-kV
Transmission Line (CAISO; ORA) 3-64

3.6.27 Alternative 31: CAISO-Approved Mission—Peñasquitos 230-kV
Transmission Line and New Sycamore—Mission 230-kV Transmission Line
(CPUC) 3-67

3.6.28 Alternative 32: Loop-in of a Single Mission—San Luis Rey 230-kV
Transmission Line into Peñasquitos Substation (CPUC) 3-68

3.6.29 Alternative 33: Loop-in of Both Mission—San Luis Rey 230-kV Lines into
Peñasquitos Substation (CPUC) 3-69

TABLE OF CONTENTS

3.6.30 Alternative 34: New Sycamore—Mission 230-kV Transmission Line and Loop-in of One Mission—San Luis Rey 230-kV Line into Peñasquitos Substation (CPUC) 3-70

3.6.31 Alternative 35: New Mission—Peñasquitos 230-kV Line and Reconfigured and Reconductored Power Lines (ORA) 3-71

3.6.32 Alternative 36: New Mission—Peñasquitos 230-kV Reconductored Poway—Pomerado Line and Series Reactor (ORA) 3-72

3.6.33 Alternative 37: Imperial Irrigation District Hooper to SONGS Line (CPUC) .. 3-72

3.6.34 Alternative 38: Increased Generation at Carlsbad or Encina During Peak Loads (CPUC) 3-73

3.6.35 Alternative 39: In-Area Distributed Generation of Renewables (Public Scoping; Public Utilities Code Section 1002.3) 3-73

3.6.36 Alternative 40: Energy Efficiency and Conservation (Public Utilities Code Section 1002.3) 3-75

3.6.37 Alternative 41: Demand Response (Public Utilities Code Section 1002.3) .. 3-77

3.7 References..... 3-78

4 Environmental Analysis 4-1

Introduction to Environmental Analysis 4-1

Format of Environmental Resource Sections 4-1

 Environmental Setting 4-2

 Applicable Regulations, Plans, and Standards 4-2

 Applicant Proposed Measures 4-2

 CEQA Significance Criteria 4-3

 Approach to Impact Analysis..... 4-3

 Proposed Project Impacts and Mitigation Measures 4-3

 Project Alternatives 4-4

 Cumulative Projects Impacts Analysis..... 4-4

4.1 Biological Resources 4.1-1

 4.1.1 Definitions 4.1-1

 4.1.2 Approach to Data Collection 4.1-3

 4.1.3 Environmental Setting 4.1-7

 4.1.4 Applicable Regulations, Plans, and Standards..... 4.1-29

 4.1.5 Applicant Proposed Measures 4.1-36

 4.1.6 CEQA Significance Criteria 4.1-40

 4.1.7 Approach to Impact Assessment..... 4.1-40

 4.1.8 Proposed Project Impacts and Mitigation Measures..... 4.1-43

 4.1.9 Alternative 1: Eastern Cable Pole at Carmel Valley Road (Avoids Cable Pole in Black Mountain Ranch Community Park)..... 4.1-105

 4.1.10 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground Alignment through City Open Space or City Water Utility Service Road (Avoids Cable Pole in Black Mountain Ranch Community Park) 4.1-113

TABLE OF CONTENTS

4.1.11 Alternative 3: Los Peñasquitos Canyon Preserve-Mercy Road
Underground Alternative (Avoids Overhead in Northern Half of
Segment A, Underground in Segment B, and Overhead in
Segment C)..... 4.1-122

4.1.12 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.1-130

4.1.13 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.1-140

4.1.14 No Project Alternative 4.1-150

4.1.15 References 4.1-151

4.2 Aesthetics..... 4.2-1

4.2.1 Definitions 4.2-1

4.2.2 Approach to Data Collection 4.2-1

4.2.3 Environmental Setting 4.2-5

4.2.4 Applicable Regulations, Plans, and Standards..... 4.2-15

4.2.5 Applicant Proposed Measures 4.2-18

4.2.6 CEQA Significance Criteria 4.2-19

4.2.7 Approach to Impact Analysis 4.2-20

4.2.8 Proposed Project Impacts and Mitigation Measures..... 4.2-23

4.2.9 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.2-76

4.2.10 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.2-85

4.2.11 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road
Underground Alternative (Avoids Overhead North Segment A,
Underground Segment B, and Overhead Segment C)..... 4.2-91

4.2.12 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.2-99

4.2.13 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead Alternative (Avoids All Proposed Project
Segments) 4.2-105

4.2.15 No Project Alternative 4.2-117

4.2.16 References 4.2-119

4.3 Cultural Resources..... 4.3-1

4.3.1 Definitions 4.3-1

4.3.2 Approach to Data Collection 4.3-3

4.3.3 Environmental Setting 4.3-7

4.3.4 Applicable Regulations, Plans, and Standards..... 4.3-23

4.3.5 Applicant Proposed Measures 4.3-27

4.3.6 CEQA Significance Criteria 4.3-28

4.3.7 Approach to Impact Analysis 4.3-28

TABLE OF CONTENTS

- 4.3.8 Proposed Project Impacts and Mitigation Measures..... 4.3-29
- 4.3.9 Alternative 1: Eastern Cable Pole at Carmel Valley Road (Avoids Cable Pole in Black Mountain Ranch Community Park)..... 4.3-36
- 4.3.10 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground Alignment through City Open Space or City Water Utility Service Road (Avoids Cable Pole in Black Mountain Ranch Community Park) 4.3-39
- 4.3.11 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road Underground (Avoids Overhead in Northern Half of Segment A, Underground in Segment B, and Overhead in Segment C) 4.3-42
- 4.3.12 Alternative 4: Segment D 69-kV Partial Underground Alignment (Reduces New TSPs in Segment D) 4.3-49
- 4.3.13 Alternative 5: Pomerado Road to Miramar Area North Combination Underground/Overhead (Avoids All Proposed Project Segments) 4.3-55
- 4.3.14 No Project Alternative 4.3-64
- 4.3.15 References 4.3-64
- 4.4 Paleontological Resources 4.4-1
 - 4.4.1 Definitions 4.4-1
 - 4.4.2 Approach to Data Collection 4.4-2
 - 4.4.3 Environmental Setting 4.4-2
 - 4.4.4 Applicable Regulations, Plans, and Standards..... 4.4-11
 - 4.4.5 Applicant Proposed Measures 4.4-11
 - 4.4.6 CEQA Significance Criteria 4.4-12
 - 4.4.7 Approach to Impact Analysis 4.4-12
 - 4.4.8 Proposed Project Impacts and Mitigation Measures..... 4.4-13
 - 4.4.9 Alternative 1: Eastern Cable Pole at Carmel Valley Road (Avoids Cable Pole in Black Mountain Ranch Community Park) 4.4-17
 - 4.4.10 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground Alignment through City Open Space or City Water Utility Service Road (Avoids Cable Pole in Black Mountain Ranch Community Park) 4.4-20
 - 4.4.11 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road Underground (Avoids Overhead in Northern Half of Segment A, Underground in Segment B, and Overhead in Segment C) 4.4-22
 - 4.4.12 Alternative 4: Segment D 69-kV Partial Underground Alignment (Reduces New TSPs in Segment D) 4.4-27
 - 4.4.13 Alternative 5: Pomerado Road to Miramar Area North Combination Underground/Overhead (Avoids All Proposed Project Segments) 4.4-29
 - 4.4.14 No Project Alternative 4.4-31
 - 4.4.15 References 4.4-32
- 4.5 Geology, Soils, and Mineral Resources 4.5-1
 - 4.5.1 Approach to Data Collection 4.5-1
 - 4.5.2 Environmental Setting 4.5-1
 - 4.5.3 Applicable Regulations, Plans, and Standards..... 4.5-22

TABLE OF CONTENTS

- 4.5.4 Applicant Proposed Measures 4.5-25
- 4.5.5 CEQA Significance Criteria 4.5-26
- 4.5.6 Approach to Impact Analysis 4.5-26
- 4.5.7 Proposed Project Impacts and Mitigation Measures..... 4.5-27
- 4.5.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.5-38
- 4.5.9 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.5-43
- 4.5.10 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road Underground
(Avoids Overhead in Northern Half of Segment A, Underground in
Segment B, and Overhead in Segment C) 4.5-48
- 4.5.11 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.5-58
- 4.5.12 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.5-68
- 4.5.13 No Project Alternative 4.5-80
- 4.5.14 References 4.5-81
- 4.6 Hydrology and Water Resources 4.6-1
 - 4.6.1 Approach to Data Collection 4.6-1
 - 4.6.2 Environmental Setting 4.6-2
 - 4.6.3 Applicable Regulations, Plans, and Standards..... 4.6-13
 - 4.6.4 Applicant Proposed Measures 4.6-19
 - 4.6.5 CEQA Significance Criteria 4.6-21
 - 4.6.6 Approach to Impact Analysis 4.6-22
 - 4.6.7 Proposed Project Impacts and Mitigation Measures..... 4.6-22
 - 4.6.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.6-37
 - 4.6.9 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.6-41
 - 4.6.10 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road Underground
(Avoids Overhead in Northern Half of Segment A, Underground in
Segment B, and Overhead in Segment C) 4.6-44
 - 4.6.11 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.6-52
 - 4.6.12 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.6-57
 - 4.6.13 No Project Alternative 4.6-65
 - 4.6.14 References 4.6-68

TABLE OF CONTENTS

VOLUME II

4.7 Transportation and Traffic 4.7-1

4.7.1 Definitions 4.7-1

4.7.2 Approach to Data Collection 4.7-3

4.7.3 Environmental Setting 4.7-4

4.7.4 Applicable Regulations, Plans, and Standards 4.7-16

4.7.5 Applicant Proposed Measures 4.7-26

4.7.6 CEQA Significance Criteria 4.7-27

4.7.7 Approach to Impact Analysis 4.7-28

4.7.8 Proposed Project Impacts and Mitigation Measures 4.7-31

4.7.9 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.7-52

4.7.10 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Access Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.7-57

4.7.11 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road
Underground (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.7-63

4.7.12 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.7-74

4.7.13 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.7-81

4.7.14 No Project Alternative 4.7-95

4.7.15 References 4.7-96

4.8 Noise 4.8-1

4.8.1 Definitions 4.8-1

4.8.2 Approach to Data Collection 4.8-4

4.8.3 Environmental Setting 4.8-6

4.8.4 Applicable Regulations, Plans, and Standards 4.8-16

4.8.5 Applicant Proposed Measures 4.8-19

4.8.6 CEQA Significance Criteria 4.8-20

4.8.7 Approach to Impact Analysis 4.8-21

4.8.8 Proposed Project Impacts and Mitigation Measures 4.8-22

4.8.9 Alternative 1: Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.8-42

4.8.10 Alternatives 2a and 2b: Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.8-46

4.8.11 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road
Underground (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.8-50

TABLE OF CONTENTS

4.8.12 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.8-58

4.8.13 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.8-65

4.8.14 No Project Alternative 4.8-77

4.8.15 References 4.8-78

4.9 Land Use and Planning 4.9-1

4.9.1 Approach to Data Collection 4.9-1

4.9.2 Environmental Setting 4.9-1

4.9.3 Regulatory Setting 4.9-10

4.9.4 Applicant Proposed Measures 4.9-15

4.9.5 CEQA Significance Criteria 4.9-15

4.9.6 Approach to Impact Analysis 4.9-15

4.9.7 Proposed Project Impacts and Mitigation Measures 4.9-15

4.9.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.9-31

4.9.9 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.9-32

4.9.10 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road
Underground (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.9-33

4.9.11 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.9-34

4.9.12 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.9-35

4.9.13 No Project Alternative 4.9-37

4.9.14 References 4.9-37

4.10 Recreation 4.10-1

4.10.1 Approach to Data Collection 4.10-1

4.10.2 Environmental Setting 4.10-2

4.10.3 Applicable Regulations, Plans, and Standards 4.10-10

4.10.4 Applicant Proposed Measures 4.10-15

4.10.5 CEQA Significance Criteria 4.10-17

4.10.6 Approach to Impact Analysis 4.10-17

4.10.7 Proposed Project Impacts and Mitigation Measures 4.10-18

4.10.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.10-30

4.10.9 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.10-34

TABLE OF CONTENTS

- 4.10.10 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road
Underground (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.10-40
- 4.10.11 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.10-48
- 4.10.12 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.10-53
- 4.10.13 No Project Alternative 4.10-58
- 4.10.14 References 4.10-60
- 4.11 Hazards and Hazardous Materials 4.11-1
 - 4.11.1 Definitions 4.11-1
 - 4.11.2 Approach to Data Collection 4.11-1
 - 4.11.3 Environmental Setting 4.11-2
 - 4.11.4 Applicable Regulations, Plans, and Standards 4.11-10
 - 4.11.5 Applicant Proposed Measures 4.11-16
 - 4.11.6 CEQA Significance Criteria 4.11-18
 - 4.11.7 Approach to Impact Analysis 4.11-18
 - 4.11.8 Proposed Project Impacts and Mitigation Measures 4.11-19
 - 4.11.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.11-41
 - 4.11.9 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.11-46
 - 4.11.10 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road
Underground Alternative (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.11-52
 - 4.11.11 Alternative 4: Segment D 69-kV Partial Underground
Alignment
(Reduces New TSPs in Segment D) 4.11-59
 - 4.11.12 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.11-67
 - 4.11.13 No Project Alternative 4.11-79
 - 4.11.14 References 4.11-81
- 4.12 Fire and Fuels Management 4.12-1
 - 4.12.1 Approach to Data Collection 4.12-1
 - 4.12.2 Environmental Setting 4.12-2
 - 4.12.3 Applicable Regulations, Plans, and Standards 4.12-12
 - 4.12.4 Applicant Proposed Measures 4.12-14
 - 4.12.5 CEQA Significance Criteria 4.12-15
 - 4.12.6 Approach to Impact Analysis 4.12-15
 - 4.12.7 Proposed Project Impacts and Mitigation Measures 4.12-19

TABLE OF CONTENTS

- 4.12.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.12-32
- 4.12.9 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.12-35
- 4.12.10 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road
Underground (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.12-36
- 4.12.11 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.12-38
- 4.12.12 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.12-39
- 4.12.13 No Project Alternative 4.12-41
- 4.12.13 References 4.12-42
- 4.13 Air Quality 4.13-1
 - 4.13.1 Approach to Data Collection 4.13-1
 - 4.13.2 Environmental Setting 4.13-2
 - 4.13.3 Applicable Regulations, Plans, and Standards 4.13-12
 - 4.13.4 Applicant Proposed Measures 4.13-14
 - 4.13.5 CEQA Significance Criteria 4.13-15
 - 4.13.6 Approach to Impact Analysis 4.13-16
 - 4.13.7 Proposed Project Impacts and Mitigation Measures 4.13-19
 - 4.13.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.13-31
 - 4.13.9 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.13-36
 - 4.13.10 Alternative 3: Los Peñasquitos Canyon Preserve-Mercy Road
Underground (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.13-40
 - 4.13.11 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.13-47
 - 4.13.12 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.13-57
 - 4.13.13 No Project Alternative 4.13-65
 - 4.13.14 References 4.13-65
- 4.14 Greenhouse Gases 4.14-1
 - 4.14.1 Approach to Data Collection 4.14-1
 - 4.14.2 Environmental Setting 4.14-1
 - 4.14.3 Applicable Regulations, Plans, and Standards 4.14-3
 - 4.14.4 Applicant Proposed Measures 4.14-7
 - 4.14.5 CEQA Significance Criteria 4.14-8

TABLE OF CONTENTS

4.14.6 Approach to Impact Analysis 4.14-8

4.14.7 Proposed Project Impacts and Mitigation Measures..... 4.14-9

4.14.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.14-15

4.14.9 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.14-17

4.14.10 Alternative 3: Los Peñasquitos Canyon Preserve – Mercy Road
Underground (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.14-19

4.14.11 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.14-23

4.14.12 Alternative 5: Pomerado Road to Miramar Area North
Combination Underground/Overhead (Avoids All Proposed
Project Segments)..... 4.14-26

4.14.13 No Project Alternative 4.14-29

4.14.14 References 4.14-30

4.15 Agriculture and Forestry 4.15-1

4.15.1 Definitions 4.15-1

4.15.2 Approach to Data Collection 4.15-1

4.15.3 Environmental Setting 4.15-2

4.15.4 Applicable Regulations, Plans, and Standards..... 4.15-10

4.15.5 Applicant Proposed Measures 4.15-12

4.15.6 CEQA Significance Criteria 4.15-12

4.15.7 Approach to Impact Analysis 4.15-13

4.15.8 Proposed Project Impacts and Mitigation Measures..... 4.15-13

4.15.9 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.15-19

4.15.10 Alternative 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.15-21

4.15.11 Alternative 3: Los Peñasquitos Canyon Preserve-Mercy Road
Underground (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.15-24

4.15.12 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.15-26

4.15.13 Alternative 5: Pomerado Road to Miramar Area North
Combination Underground/Overhead (Avoids All Proposed
Project Segments)..... 4.15-28

4.15.14 No Project Alternative 4.15-30

4.15.15 References 4.15-31

4.16 Population and Housing 4.16-1

4.16.1 Approach to Data Collection 4.16-1

TABLE OF CONTENTS

4.16.2 Environmental Setting 4.16-1

4.16.3 Applicable Regulations, Plans, and Standards..... 4.16-3

4.16.4 Applicant Proposed Measures 4.16-3

4.16.5 CEQA Significance Criteria 4.16-3

4.16.6 Approach to Impact Analysis 4.16-4

4.16.7 Proposed Project Impacts and Mitigation Measures..... 4.16-4

4.16.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.16-6

4.16.9 Alternative 2: Eastern Cable Pole at Pole P40 and Underground Alignment
through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.16-7

4.16.10 Alternative 3: Los Peñasquitos Canyon Preserve-Mercy Road
Underground (Avoids Overhead North Segment A, Underground
Segment B, and Overhead Segment C) 4.16-8

4.16.11 Alternative 4: Segment D 69kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.16-9

4.16.12 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.16-11

4.16.13 No Project Alternative 4.16-12

4.16.14 References 4.16-12

4.17 Utilities and Public Service Systems 4.17-1

4.17.1 Approach to Data Collection 4.17-1

4.17.2 Environmental Setting 4.17-1

4.17.3 Applicable Regulations, Plans, and Standards..... 4.17-14

4.17.4 Applicant Proposed Measures 4.17-20

4.17.5 CEQA Significance Criteria 4.17-22

4.17.6 Approach to Impact Analysis 4.17-23

4.17.7 Proposed Project Impacts and Mitigation Measures..... 4.17-23

4.17.8 Alternative 1: Eastern Cable Pole at Carmel Valley Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.17-36

4.17.9 Alternatives 2a and 2b: Eastern Cable Pole at Pole P40 and Underground
Alignment through City Open Space or City Water Utility Service Road
(Avoids Cable Pole in Black Mountain Ranch Community Park) 4.17-41

4.17.10 Alternative 3: Los Peñasquitos Canyon Preserve-Mercy
Road Underground (Avoids Overhead in Northern Half of Segment A,
Underground in Segment B, and Overhead in Segment C) 4.17-48

4.17.11 Alternative 4: Segment D 69-kV Partial Underground Alignment
(Reduces New TSPs in Segment D) 4.17-56

4.17.12 Alternative 5: Pomerado Road to Miramar Area North Combination
Underground/Overhead (Avoids All Proposed Project Segments) 4.17-64

4.17.13 No Project Alternative 4.17-74

4.17.14 References 4.17-75

TABLE OF CONTENTS

- 5 Cumulative Impacts 5-1**
 - 5.1 Approach to Cumulative Impact Analysis 5-1
 - 5.2 Cumulative Scenario Projects 5-3
 - 5.2.1 Cumulative Project List 5-3
 - 5.2.2 Plans and Projections 5-16
 - 5.2.3 Mission—Peñasquitos 230-kV Transmission Line 5-16
 - 5.3 Cumulative Impact Analysis for the Proposed Project 5-16
 - 5.3.1 Introduction 5-16
 - 5.3.2 Biological Resources 5-17
 - 5.3.3 Aesthetics 5-20
 - 5.3.4 Cultural Resources 5-26
 - 5.3.5 Paleontological Resources 5-28
 - 5.3.6 Geology and Soils 5-29
 - 5.3.7 Hydrology and Water Resources 5-31
 - 5.3.8 Transportation and Traffic 5-34
 - 5.3.9 Noise 5-36
 - 5.3.10 Recreation 5-38
 - 5.3.11 Hazards and Hazardous Materials 5-41
 - 5.3.12 Fire and Fuels Management 5-43
 - 5.3.13 Air Quality 5-44
 - 5.3.14 Greenhouse Gas Emissions 5-46
 - 5.3.15 Agriculture 5-47
 - 5.3.16 Utilities and Public Services 5-48
 - 5.4 Cumulative Impact Analysis for Alternatives 5-50
 - 5.4.1 Introduction 5-50
 - 5.4.2 Alternatives 5-65
 - 5.4.3 Comparative Analysis of Cumulative Impacts 5-67
 - 5.4.4 Alternative Impacts on Air Quality 5-67
 - 5.5 References 5-75
- 6 Comparison of Alternatives 6-1**
 - 6.1 Introduction 6-1
 - 6.2 CEQA Requirements for Alternatives Comparison 6-1
 - 6.2.1 Conclusion Regarding Environmentally Superior Alternative 6-1
 - 6.3 Alternatives Comparison Methodology 6-2
 - 6.4 Comparison of Project Alternatives 6-3
 - 6.4.1 Cable Pole and Routing Project Alternatives 6-4
 - 6.4.2 Proposed Project vs. Alternative 3: Los Peñasquitos Canyon Preserve—
Mercy Road Underground 6-12

TABLE OF CONTENTS

- 6.4.3 Proposed Project vs. Alternative 4: Segment D 69-kV Partial Underground Alignment..... 6-17
- 6.4.4 Proposed Project vs. Alternative 5: Pomerado Road to Miramar Area North Combination Underground/Overhead..... 6-21
- 6.4.5 Conclusion: Environmentally Superior Alternative 6-26
- 6.5 No Project Alternative vs. the PROPOSED PROJECT 6-26
- 7 Other CEQA Considerations 7-1**
 - 7.1 Electrical Interference 7-1
 - 7.1.1 Defining Electrical Interference 7-1
 - 7.1.2 Policies, Standards, and Regulations..... 7-5
 - 7.1.3 Electrical Interference Data Applicable to the Proposed Project..... 7-6
 - 7.2 Energy Conservation..... 7-7
 - 7.2.1 Proposed Project Energy Conservation 7-7
 - 7.2.2 Energy Conservation Alternatives 7-8
 - 7.3 Growth Inducing Effects..... 7-9
 - 7.3.1 Growth Caused by Direct and Indirect Employment 7-9
 - 7.3.2 Growth Related to Provision of Additional Electric Power 7-9
 - 7.4 Significant Irreversible Changes and Irretrievable Commitments of Resources ... 7-10
 - 7.4.1 Non-Renewable Resources..... 7-10
 - 7.4.2 Long-term or Permanent Access to Previously Inaccessible Areas 7-11
 - 7.4.3 Potential Accidents 7-11
 - 7.5 Significant Environmental Effects that Cannot be Avoided..... 7-12
 - 7.6 References..... 7-13
- 8 Report Preparation..... 8-1**
 - 8.1 List of Preparers 8-1
 - 8.1.1 Lead and Participating Agencies 8-1
 - 8.2 Agencies and Organizations Contacted..... 8-3
 - 8.2.1 Federal Agencies and Organizations..... 8-3
 - 8.2.2 State Agencies and Organizations 8-3
 - 8.2.3 Local Agencies and Organizations..... 8-3
 - 8.2.4 Tribes 8-4
- 9 Mitigation Monitoring and Reporting Plan 9-1**
 - 9.1 Authority for the Mitigation Monitoring, Compliance, and Reporting Program 9-2
 - 9.1.1 California Public Utilities Commission..... 9-2
 - 9.2 Organization of the Mitigation Monitoring, Compliance, and Reporting Program..... 9-2
 - 9.3 Roles and Responsibilities 9-4
 - 9.3.1 Enforcement Responsibility..... 9-5

TABLE OF CONTENTS

9.3.2	Compliance Responsibility	9-5
9.4	Dispute Resolution	9-5
9.5	General Monitoring Procedures.....	9-6
9.5.1	Environmental Monitors.....	9-6
9.5.2	Construction Personnel	9-6
9.5.3	Reporting Procedures	9-7
9.5.4	Public Access to Records	9-7

VOLUME III

- A Detailed Proposed Project Route Maps**
- B Proposed Project Pole Details**
- C Magnetic Field Management Plan**
- D Alternatives Screening Report**
- E Detailed Alternative Route Maps**
- F Aesthetics Resources Support Information**
- G Biological Resources Support Information**
- H Cultural Resources Support Information**
- I Draft Fire Prevention Plan**
- J Air Quality and Greenhouse Gases Support Information**
- K Multiple Species Conservation Plan Subarea Consistency**
- L SDG&E Best Management Practices Manual**
- M Transportation and Traffic Support Information**
- N Hazards and Hazardous Materials Support Information**

TABLE OF CONTENTS

List of Tables

Table ES.3-1	Summary of Renewable Generation in San Diego RPS Portfolio	ES-9
Table ES.4-1	Summary of Scoping Comments	ES-10
Table ES.7-1	Cumulative Analysis of Proposed Project and Alternatives	ES-55
Table ES.8-1	Summary of Alternatives Analyzed	ES-63
Table 1.1-1	Summary of Renewable Generation in San Diego RPS Portfolio	1-6
Table 1.3-1	Potentially Required Permits and Approvals	1-10
Table 1.4-1	Agencies, Municipalities, and Tribes Notified During the Scoping Process	1-13
Table 1.4-2	Summary of Scoping Comments	1-14
Table 2.1-1	Existing Infrastructure in the Transmission Corridor	2-1
Table 2.2-1	Proposed Project Components by Location.....	2-2
Table 2.2-2	Pole Characteristics.....	2-12
Table 2.2-3	Transmission Line Segment A Poles and Infrastructure to be Installed and Removed.....	2-21
Table 2.2-4	Transmission Line Segment B Infrastructure to be Installed and Removed	2-27
Table 2.2-5	Transmission Line Segment C Infrastructure to be Installed and Removed.....	2-29
Table 2.2-6	Transmission Line Segment D Infrastructure to be Installed and Removed.....	2-32
Table 2.3-1	Areas of Temporary and Permanent Project Disturbance.....	2-36
Table 2.3-2	Proposed Project Staging Yards and Substation Storage	2-40
Table 2.3-3	Estimated Cut-and-Fill Quantities	2-42
Table 2.3-4	Retaining Wall Dimensions.....	2-43
Table 2.3-5	Hazardous Materials Typically Used for Construction	2-59
Table 2.3-6	Typical End Destination of Removed Materials	2-60
Table 2.3-7	Construction Equipment Use and Workers	2-61
Table 2.3-8	Equipment Use	2-69
Table 2.3-9	Proposed Construction Timetable.....	2-70
Table 2.4-1	New Permanent Work Areas for Aboveground Facilities	2-72
Table 2.4-2	New Permanent Work Areas for Underground Facilities	2-72
Table 2.5-1	Applicant Proposed Measures	2-74
Table 2.6-1	Existing and Proposed EMF by Transmission Line Segment.....	2-94
Table 2.6-2	Low- and No-Cost Measures SDG&E Proposed for the Proposed Project	2-95
Table 2.6-3	Low- and No-Cost Measures SDG&E Rejected for the Proposed Project	2-95
Table 3.3-1	Summary of Renewable Generation in San Diego RPS Portfolio	3-5
Table 3.4-1	Sycamore-Peñasquitos 230-kV Transmission Line Project Alternatives	3-9
Table 3.5-1	Alternative 3 Proposed Construction Timetable	3-24
Table 3.5-2	Alternative 4 Proposed Construction Timetable	3-32
Table 3.5-3	Alternative 5 Proposed Construction Timetable	3-36
Table 4.1-1	Summary of 7.5 Minute USGS Quadrangles Reviewed.....	4.1-3
Table 4.1-2	Summary of Vegetation Communities in Biological Survey Area	4.1-7
Table 4.1-3	Special-status Species with Moderate or High Potential to Occur in the Biological Survey Area.....	4.1-10
Table 4.1-4	Potential Jurisdictional Waters and Wetlands in BSA	4.1-22
Table 4.1-5	Proximity of Critical Habitat to Proposed Project.....	4.1-25
Table 4.1-6	Applicant Proposed Measures for Biological Resources Impacts.....	4.1-37
Table 4.1-7	Summary of Proposed Project Impacts to Biological Resources.....	4.1-44
Table 4.1-8	Impacts to Individual Special-status Plants from the Proposed Project Area.....	4.1-47
Table 4.1-9	Special-status Wildlife located in the Proposed Project Area and Potential for Effect	4.1-49
Table 4.1-10	Required Habitat Mitigation Ratios	4.1-75
Table 4.1-11	Summary of Proposed Project Impacts to Potentially Suitable Habitat for Special-status Reptile Species.....	4.1-80

TABLE OF CONTENTS

Table 4.1-12 Summary of Proposed Project Impacts to Potentially Suitable Habitat for Special-status Bird Species Covered by the Subregional NCCP¹ 4.1-82

Table 4.1-13 Summary of Proposed Project Impacts to Potentially Suitable Habitat for Special-status Mammal Species Covered by the Subregional NCCP 4.1-89

Table 4.1-14 Impacts to Vegetation Communities within the Proposed Project Area 4.1-93

Table 4.1-15 Summary of Proposed Project Impacts to MHPA Preserve Area 4.1-97

Table 4.1-16 Potential Impacts to Waters within the Proposed Project Area 4.1-101

Table 4.1-17 Summary of Impacts of Alternative 1 to Biological Resources 4.1-106

Table 4.1-18 Summary of Impacts of Alternative 2 to Biological Resources 4.1-114

Table 4.1-19 Summary of Impacts of Alternative 3 to Biological Resources 4.1-123

Table 4.1-20 Summary of Impacts of Alternative 4 to Biological Resources 4.1-131

Table 4.1-21 Summary of Impacts of Alternative 5 to Biological Resources 4.1-141

Table 4.2-1 Definition of Visual Resources Terms 4.2-2

Table 4.2-2 Description of Landscape Character Units 4.2-7

Table 4.2-3 Applicant Proposed Measures to Reduce Aesthetic Impacts 4.2-19

Table 4.2-4 Guidelines for Determining Adverse Visual Impact Significance 4.2-22

Table 4.2-5 Visual Impact Score Description..... 4.2-22

Table 4.2-6 Summary of Proposed Project Impacts to Aesthetics..... 4.2-23

Table 4.2-7 Summary of the Visible Features of the Proposed Project by Transmission Line Segment 4.2-30

Table 4.2-8 Description of Proposed Project Key Observation Points and Viewer Sensitivity at Each Location 4.2-63

Table 4.2-9 Summary of Visual Impacts for Key Observation Points 4.2-65

Table 4.2-10 Summary of Alternative 1 Impacts to Aesthetics 4.2-77

Table 4.2-11 Summary of Alternative 2 Impacts to Aesthetics 4.2-86

Table 4.2-12 Summary of Alternative 3 Impacts to Aesthetics 4.2-93

Table 4.2-13 Summary of Alternative 4 Impacts to Aesthetics 4.2-101

Table 4.2-14 Summary of Alternative 5 Impacts to Aesthetics 4.2-107

Table 4.3-1 Tribes Contacted During Native American Consultation..... 4.3-6

Table 4.3-2 Cultural Resources Sites within the Proposed Project Survey Areas..... 4.3-17

Table 4.3-3 Applicant Proposed Measures for Cultural Resources Impacts 4.3-27

Table 4.3-4 Summary of Proposed Project Impacts on Cultural Resources 4.3-30

Table 4.3-5 Summary of Alternative 1 Impacts on Cultural Resources 4.3-37

Table 4.3-6 Summary of Alternative 2 Impacts on Cultural Resources 4.3-40

Table 4.3-7 Resources Identified in Records Search within Alternative 3 Underground Alignment Impact Areas..... 4.3-43

Table 4.3-8 Summary of Alternative 3 Impacts on Cultural Resources 4.3-44

Table 4.3-9 Resources Identified in Records Search within Alternative 4 Impact Areas along Carmel Mountain Road and East Ocean Air Drive .. 4.3-49

Table 4.3-10 Summary of Alternative 4 Impacts on Cultural Resources 4.3-50

Table 4.3-11 Resources Identified in Records Search within Alternative 5 Impact Areas. 4.3-56

Table 4.3-12 Summary of Alternative 5 Impacts on Cultural Resources 4.3-61

Table 4.4-1 Paleontological Sensitivity of Geologic Units that Underlay the Proposed Project..... 4.4-6

Table 4.4-2 Applicant Proposed Measures for Paleontological Resource Impacts 4.4-12

Table 4.4-3 Summary of Proposed Project Impacts to Paleontological Resources..... 4.4-13

Table 4.4-4 Summary of Alternative 1 Impacts to Paleontological Resources..... 4.4-18

Table 4.4-5 Summary of Alternatives 2a and 2b Impacts to Paleontological Resources4.4-20

Table 4.4-6 Paleontological Sensitivity of Geologic Units that Underlay Alternative 3.... 4.4-23

Table 4.4-7 Summary of Alternative 3 Impacts to Paleontological Resources..... 4.4-24

Table 4.4-8 Paleontological Sensitivity of Geologic Units that Underlay Underground Portion of Alternative 4..... 4.4-27

Table 4.4-9 Summary of Alternative 4 Impacts to Paleontological Resources..... 4.4-28

Table 4.4-10 Paleontological Sensitivity of Geologic Units that Underlay Alternative 5.... 4.4-30

TABLE OF CONTENTS

Table 4.4-11 Summary of Alternative 5 Impacts to Paleontological Resources..... 4.4-30

Table 4.5-1 Geologic Units in the Proposed Project Area..... 4.5-6

Table 4.5-2 Major Soil Units in the Proposed Project Area..... 4.5-7

Table 4.5-3 Major Active Faults in the Proposed Project Region 4.5-17

Table 4.5-4 Estimated Ground Motion Parameters in the Proposed Project Area¹ 4.5-19

Table 4.5-5 Applicant Proposed Measures for Geology, Soils, and Mineral Resources Impacts 4.5-25

Table 4.5-6 Summary of Proposed Project Impacts to Geology, Soils, and Mineral Resources 4.5-27

Table 4.5-7 Summary of Alternative 1 Impacts on Geology, Soils, and Mineral Resources 4.5-39

Table 4.5-8 Summary of Alternative 2 Impacts on Geology, Soils, and Mineral Resources 4.5-44

Table 4.5-9 Geologic Units in the Alternative 3 Area..... 4.5-50

Table 4.5-10 Major Soil Units in the Alternative 3 Area..... 4.5-53

Table 4.5-11 Summary of Alternative 3 Impacts on Geology, Soils, and Mineral Resources 4.5-54

Table 4.5-12 Geologic Units in the Alternative 4 Area..... 4.5-59

Table 4.5-13 Major Soil Units in the Alternative 4 Area..... 4.5-62

Table 4.5-14 Summary of Alternative 4 Impacts on Geology, Soils, and Mineral Resources 4.5-63

Table 4.5-15 Geologic Units in the Alternative 5 Area..... 4.5-69

Table 4.5-16 Major Soil Units in the Proposed Project Area..... 4.5-69

Table 4.5-17 Summary of Alternative 5 Impacts on Geology, Soils, and Mineral Resources 4.5-75

Table 4.6-1 Hydrologic Units in the Proposed Project Area 4.6-3

Table 4.6-2 Creeks and Streams in the Proposed Project Area 4.6-6

Table 4.6-3 Impaired Water Bodies Within and Downstream of the Proposed Project Area..... 4.6-9

Table 4.6-4 Jurisdictional Features in the Proposed Project Study Area by Regulatory Agency 4.6-10

Table 4.6-5 Applicant Proposed Measures for Hydrology and Water Resources Impacts..... 4.6-19

Table 4.6-6 Summary of Proposed Project Impacts to Hydrology and Water Resources..... 4.6-22

Table 4.6-7 Proposed Project Soil-Disturbing Activities and Nearest Waterbody..... 4.6-25

Table 4.6-8 Summary of Alternative 1 Impacts to Hydrology and Water Resources 4.6-38

Table 4.6-9 Summary of Alternatives 2 Impacts to Hydrology and Water Resources 4.6-41

Table 4.6-10 Summary of Alternative 3 Impacts to Hydrology and Water Resources 4.6-48

Table 4.6-11 Summary of Alternative 4 Impacts to Hydrology and Water Resources 4.6-53

Table 4.6-12 Summary of Alternative 5 Impacts to Hydrology and Water Resources 4.6-58

Table 4.7-1 Level of Service for Freeway Segments..... 4.7-2

Table 4.7-2 Definitions of Level of Service for Local Roads..... 4.7-2

Table 4.7-3 Traffic Volumes on I-15 and SR-56 4.7-4

Table 4.7-4 Airports and Heliports in the Proposed Project Vicinity 4.7-8

Table 4.7-5 Bicycle Routes near the Proposed Project Area..... 4.7-15

Table 4.7-6 Public Transit Routes near the Proposed Project Area..... 4.7-17

Table 4.7-7 Applicant Proposed Measures for Transportation and Traffic Impacts..... 4.7-26

Table 4.7-8 Maximum Construction Vehicle Trips per Transmission Line Segment..... 4.7-29

Table 4.7-9 Estimated Proposed Project Vehicle Trips for Equipment Deliveries..... 4.7-30

Table 4.7-10 Summary of Proposed Project Impacts to Transportation and Traffic..... 4.7-31

Table 4.7-11 Summary of Alternative 1 Impacts to Transportation and Traffic..... 4.7-53

Table 4.7-12 Summary of Alternative 2 Impacts to Transportation and Traffic..... 4.7-58

Table 4.7-13 Summary of Alternative 3 Impacts to Transportation and Traffic..... 4.7-67

TABLE OF CONTENTS

Table 4.7-14	Maximum Construction Vehicle Trips for Alternative 3	4.7-69
Table 4.7-15	Summary of Alternative 4 Impacts to Transportation and Traffic.....	4.7-75
Table 4.7-16	Summary of Alternative 5 Impacts to Transportation and Traffic.....	4.7-83
Table 4.8-1	Typical Noise Levels in the Environment	4.8-2
Table 4.8-2	Noise-Sensitive Receptors within 1,000 Feet of the Proposed Project	4.8-13
Table 4.8-3	Summary of Ambient Noise Levels near Proposed Project	4.8-15
Table 4.8-4	Construction Groundborne Vibration Damage Criteria	4.8-17
Table 4.8-5	Groundborne Vibration Impact Thresholds	4.8-17
Table 4.8-6	Poway Noise Requirements for Construction Equipment.....	4.8-19
Table 4.8-7	Applicant Proposed Measures for Noise Impacts	4.8-20
Table 4.8-8	Summary of Proposed Project Impacts to Noise	4.8-23
Table 4.8-9	General Plan Policies and Noise Standards for Cities in the Project Area....	4.8-25
Table 4.8-10	Maximum Noise Levels Generated by Construction Equipment	4.8-25
Table 4.8-11	Typical Cumulative Noise Levels by Stage	4.8-26
Table 4.8-12	Maximum Possible Helicopter Noise Levels	4.8-27
Table 4.8-13	Summary of Construction Noise Levels and Standards by Proposed Project Work Area.....	4.8-27
Table 4.8-14	Proposed Project Construction Groundborne Vibration Levels	4.8-37
Table 4.8-15	Summary of Alternative 1 Impacts to Noise	4.8-43
Table 4.8-16	Maximum Noise Levels for Alternatives 1 Through 5.....	4.8-44
Table 4.8-17	Summary of Alternative 2 Impacts to Noise	4.8-47
Table 4.8-18	Nearest Noise-Sensitive Receptors to Alternative 3.....	4.8-50
Table 4.8-19	Alternative 3 Approximate Ambient Noise Levels	4.8-53
Table 4.8-20	Summary of Alternative 3 Impacts to Noise	4.8-53
Table 4.8-21	Nearest Noise-Sensitive Receptors to Alternative 4.....	4.8-58
Table 4.8-22	Summary of Alternative 4 Impacts to Noise	4.8-61
Table 4.8-23	Nearest Noise-Sensitive Receptors to Alternative 5.....	4.8-66
Table 4.8-24	Alternative 5 Approximate Ambient Noise Levels.....	4.8-66
Table 4.8-25	Summary of Alternative 5 Impacts to Noise	4.8-71
Table 4.9-1	Project Components by Jurisdiction.....	4.9-2
Table 4.9-2	General Plan Designation Definitions	4.9-5
Table 4.9-3	Summary of Current Land Uses by Project Component.....	4.9-8
Table 4.9-4	Summary of Proposed Project Impacts to Land Use and Planning.....	4.9-15
Table 4.9-5	Consistency Analysis of Land Use Plans, Policies, and Regulations	4.9-19
Table 4.9-6	Summary of Alternative 1 Impacts to Land Use and Planning.....	4.9-31
Table 4.9-7	Summary of Alternative 2 Impacts to Land Use and Planning.....	4.9-32
Table 4.9-8	Summary of Alternative 3 Impacts to Land Use and Planning.....	4.9-34
Table 4.9-9	Summary of Alternative 4 Impacts to Land Use and Planning.....	4.9-35
Table 4.9-10	Summary of Alternative 5 Impacts to Land Use and Planning.....	4.9-36
Table 4.10-1	Active-Use City Parks within 1,000 Feet of the Proposed Project	4.10-8
Table 4.10-2	Applicant Proposed Measures for Recreation Impacts	4.10-15
Table 4.10-3	Summary of Proposed Project Impacts on Recreation	4.10-18
Table 4.10-4	Temporary Park Closures	4.10-22
Table 4.10-5	Trails and Utility Access Roads near Proposed Project Work Areas	4.10-24
Table 4.10-6	Summary of Alternative 1 Impacts on Recreation	4.10-31
Table 4.10-7	Summary of Alternative 2 Impacts on Recreation	4.10-35
Table 4.10-8	Active-use City Parks within 1,000 feet of Alternative 3.....	4.10-40
Table 4.10-9	Summary of Alternative 3 Impacts on Recreation	4.10-43
Table 4.10-10	Summary of Alternative 4 Impacts on Recreation	4.10-48
Table 4.10-11	Active-use City Parks within 1,000 feet of Alternative 5.....	4.10-54
Table 4.10-12	Summary of Alternative 5 Impacts on Recreation	4.10-54
Table 4.11-1	Open Hazardous Sites within 0.25 Mile of Proposed Project Segment A.....	4.11-7
Table 4.11-2	Schools within 0.25 Mile of the Proposed Project.....	4.11-7
Table 4.11-3	Open Hazardous Sites within 0.25 Mile of Stowe and SR-56 Staging Yards	4.11-10

TABLE OF CONTENTS

Table 4.11-4 Applicant Proposed Measures for Hazards and Hazardous Materials Impacts..... 4.11-16

Table 4.11-5 Summary of Proposed Project Impacts to Hazards and Hazardous Materials 4.11-19

Table 4.11-6 Summary of Alternative 1 Impacts to Hazards and Hazardous Materials .. 4.11-42

Table 4.11-7 Summary of Alternative 2 Impacts to Hazards and Hazardous Materials .. 4.11-47

Table 4.11-8 Schools within 0.25 Mile of Alternative 3..... 4.11-52

Table 4.11-9 Summary of Alternative 3 Impacts to Hazards and Hazardous Materials .. 4.11-53

Table 4.11-10 Summary of Alternative 4 Impacts to Hazards and Hazardous Materials .. 4.11-60

Table 4.11-11 Open Hazardous Sites within 0.25 Mile of Alternative 5..... 4.11-68

Table 4.11-12 Schools within 0.25 Mile of the Alternative 5 Alignment 4.11-68

Table 4.11-13 Summary of Alternative 5 Impacts to Hazards and Hazardous Materials .. 4.11-70

Table 4.12-1 Applicant Proposed Measures for Fire and Fuel Management Impacts .. 4.12-15

Table 4.12-2 Wildfire Containment Conflict Index 4.12-17

Table 4.12-3 Summary of Proposed Project Impacts to Fire and Fuels Management 4.12-20

Table 4.12-4 Wildfire Risk and Containment Screening of Project Components Outside of Modeled Firesheds 4.12-26

Table 4.12-5 Summary of Alternative 1 Impacts to Fire and Fuels Management 4.12-33

Table 4.12-6 Summary of Alternative 2 Impacts to Fire and Fuels Management 4.12-35

Table 4.12-7 Summary of Alternative 3 Impacts to Fire and Fuels Management 4.12-37

Table 4.12-8 Summary of Alternative 4 Impacts to Fire and Fuels Management 4.12-38

Table 4.12-9 Summary of Alternative 5 Impacts to Fire and Fuels Management 4.12-40

Table 4.13-1 Climatological Data Summary in Poway Valley..... 4.13-3

Table 4.13-2 National and California Ambient Air Quality Standards 4.13-4

Table 4.13-3 Sensitive Receptors within 1,000 Feet of the Proposed Project 4.13-9

Table 4.13-4 San Diego Air Basin Air Quality Attainment Designations..... 4.13-11

Table 4.13-5 Ambient Air Quality Summary from Nearby Monitoring Stations 4.13-12

Table 4.13-6 Applicant Proposed Measures for Air Quality Impacts..... 4.13-15

Table 4.13-7 Emissions Factors and Equipment Assumptions Used in Emissions Modeling 4.13-19

Table 4.13-8 Summary of Proposed Project Impacts to Air Quality..... 4.13-19

Table 4.13-9 Estimated Peak Daily Construction Air Pollutant Emissions..... 4.13-23

Table 4.13-10 Summary of Alternative 1 Impacts to Air Quality..... 4.13-32

Table 4.13-11 Summary of Alternative 2 Impacts to Air Quality..... 4.13-36

Table 4.13-12 Sensitive Receptors within 1,000 Feet of Alternative 3 4.13-41

Table 4.13-13 Summary of Alternative 3 Impacts to Air Quality..... 4.13-42

Table 4.13-14 Alternative 3 Estimated Peak Daily Construction Air Pollutant Emissions 4.13-45

Table 4.13-15 Sensitive Receptors within 1,000 Feet of Underground Portion of Alternative 4 within Carmel Mountain Road and East Ocean Air Drive 4.13-48

Table 4.13-16 Summary of Alternative 4 Impacts to Air Quality..... 4.13-48

Table 4.13-17 Alternative 4 Estimated Peak Daily Construction Air Pollutant Emissions (Only Alternative 4)..... 4.13-52

Table 4.13-18 Estimated Peak Daily Construction Air Pollutant Emissions from Simultaneous Construction of Alternative 4 and Proposed Project Segments A, B, and C 4.13-53

Table 4.13-19 Sensitive Receptors within 1,000 Feet of Alternative 5 between P5 and Peñasquitos Substation..... 4.13-57

Table 4.13-20 Summary of Alternative 5 Impacts to Air Quality..... 4.13-59

Table 4.13-21 Alternative 5 Estimated Peak Daily Construction Air Pollutant Emissions 4.13-62

Table 4.14-1 Global Warming Potentials of Common Greenhouse Gases..... 4.14-2

Table 4.14-2 California Greenhouse Gas Inventory for 2005-2012 4.14-2

Table 4.14-3 San Diego County Greenhouse Gas Inventory and Emissions Projections... 4.14-3

Table 4.14-4 Climate Change Scoping Plan Actions 4.14-6

Table 4.14-5 Applicant Proposed Measures for Greenhouse Gas Impacts..... 4.14-8

TABLE OF CONTENTS

Table 4.14-6 Summary of Proposed Project Impacts to Greenhouse Gases..... 4.14-9

Table 4.14-7 Proposed Project GHG Emissions..... 4.14-11

Table 4.14-8 Proposed Project Conformity with CARB Climate Change
Scoping Plan Actions 4.14-13

Table 4.14-9 Summary of Alternative 1 Impacts to Greenhouse Gases..... 4.14-15

Table 4.14-10 Summary of Alternative 2 Impacts to Greenhouse Gases..... 4.14-18

Table 4.14-11 Summary of Alternative 3 Impacts to Greenhouse Gases..... 4.14-20

Table 4.14-12 Alternative 3 GHG Emissions..... 4.14-21

Table 4.14-13 Summary of Alternative 4 Impacts to Greenhouse Gases..... 4.14-23

Table 4.14-14 Alternative 4 GHG Emissions..... 4.14-24

Table 4.14-15 Summary of Alternative 5 Impacts to Greenhouse Gases..... 4.14-26

Table 4.14-16 Alternative 5 GHG Emissions..... 4.14-28

Table 4.15-1 Farmland Categories in the Proposed Project Vicinity 4.15-3

Table 4.15-2 Local Agricultural Land Use and Zoning Designations in
the Proposed Project Vicinity 4.15-9

Table 4.15-3 Summary of Proposed Project Impacts to Agriculture and Forestry..... 4.15-13

Table 4.15-4 Farmland Impacted by the Proposed Project 4.15-15

Table 4.15-5 Proposed Project Temporary and Permanent Impacts within
Areas Zoned for Agricultural Use 4.15-17

Table 4.15-6 Summary of Alternative 1 Impacts to Agriculture and Forestry..... 4.15-20

Table 4.15-7 Summary of Alternative 2 Impacts to Agriculture and Forestry..... 4.15-22

Table 4.15-8 Summary of Alternative 3 Impacts to Agriculture and Forestry..... 4.15-25

Table 4.15-9 Summary of Alternative 4 Impacts to Agriculture and Forestry..... 4.15-27

Table 4.15-10 Summary of Alternative 5 Impacts to Agriculture and Forestry..... 4.15-29

Table 4.16-1 Population Estimates and Projections 4.16-1

Table 4.16-2 Housing Estimates and Projections..... 4.16-2

Table 4.16-3 Locations and Communities for Proposed Project Substations
and Staging Yards 4.16-3

Table 4.16-4 Summary of Proposed Project Impacts to Population and Housing 4.16-4

Table 4.16-5 Summary of Alternative 1 Impacts to Population and Housing 4.16-6

Table 4.16-6 Summary of Alternative 2 Impacts to Population and Housing 4.16-8

Table 4.16-7 Summary of Alternative 3 Impacts to Population and Housing 4.16-9

Table 4.16-8 Summary of Alternative 4 Impacts to Population and Housing 4.16-10

Table 4.16-9 Summary of Alternative 5 Impacts to Population and Housing 4.16-11

Table 4.17-1 Utilities that Cross or Run Parallel to the Proposed Project 4.17-2

Table 4.17-2 Public Services near the Proposed Project Area 4.17-8

Table 4.17-3 Divisions of the City of San Diego Police Department within
the Proposed Project Area 4.17-12

Table 4.17-4 Applicant Proposed Measures 4.17-21

Table 4.17-5 Summary of Proposed Project Impacts to Utilities and
Public Service Systems 4.17-24

Table 4.17-6 Summary of Alternative 1 Impacts to Utilities and Public Service Systems . 4.17-36

Table 4.17-7 Summary of Alternative 2 Impacts to Utilities and Public Service Systems . 4.17-42

Table 4.17-8 Utilities in Proximity to Alternative 3 4.17-49

Table 4.17-9 Parallel Metallic Pipelines along Alternative 3 4.17-49

Table 4.17-10 Summary of Alternative 3 Impacts to Utilities and Public Service Systems . 4.17-50

Table 4.17-11 Utilities in Proximity to Alternative 4 4.17-57

Table 4.17-12 Parallel Metal Pipelines along Alternative 4 4.17-57

Table 4.17-13 Summary of Alternative 4 Impacts to Utilities and Public Service Systems . 4.17-58

Table 4.17-14 Utilities Located in Proximity to Alternative 5 4.17-65

Table 4.17-15 Parallel Metal Pipelines along Alternative 5 Alignment 4.17-66

Table 4.17-16 Summary of Alternative 5 Impacts to Utilities and Public Service Systems . 4.17-67

Table 5.2-1 Cumulative Scenario Projects..... 5-4

Table 5.4-1 Cumulative Scenario Projects Near Alternative Alignments..... 5-52

TABLE OF CONTENTS

Table 5.4-2	Cumulative Analysis of Alternatives	5-69
Table 6.4-1	Summary of All Significant and Unavoidable Impacts for the Proposed Project.....	6-4
Table 6.4-2	Summary of Significant and Unavoidable Impacts by Cable Pole Alternative.....	6-6
Table 6.4-3	Comparison of the Proposed Project to the Cable Pole Alternatives	6-8
Table 6.4-4	Summary of Significant and Unavoidable Impacts Proposed Project and Alternative 3: Los Peñasquitos Canyon—Mercy Road Alternative	6-12
Table 6.4-5	Comparison of the Proposed Project to Alternative 3.....	6-14
Table 6.4-6	Summary of Significant and Unavoidable Impacts Proposed Project and Alternative 4: Segment D 69-kV Partial Underground Alignment	6-17
Table 6.4-7	Comparison of the Proposed Project to Alternative 4.....	6-18
Table 6.4-8	Summary of Significant and Unavoidable Impacts Proposed Project and Alternative 5: Pomerado Road to Miramar Area North Combination Underground/Overhead	6-21
Table 6.4-9	Comparison of the Proposed Project to Alternative 5.....	6-23
Table 6.5-1	Comparison of the Proposed Project to the No Project Alternative	6-27
Table 7.5-1	Summary of Significant and Unavoidable Impacts of the Proposed Project .	7-12
Table 8.1-1	Consultant Team.....	8-1
Table 8.1-2	Subconsultant Teams	8-2
Table 8.2-1	Local Agencies and Organizations Consulted	8-4
Table 9.1-1	Mitigation Monitoring and Reporting Plan.....	9-9

List of Figures

Figure ES.1-1	Project Location	ES-2
Figure ES.5-1	Cable Pole Alternatives Retained for EIR Analysis	ES-14
Figure ES.5-2	Routing Alternatives Retained for EIR Analysis (Alternatives 3, 4, and 5)	ES-15
Figure ES.6-1	No Project Alternative	ES-23
Figure 1.1-1	Project Location	1-2
Figure 1.1-2	Project Alignment Overview	1-3
Figure 2.2-1	Project Alignment: Segment A from Sycamore Canyon Substation to Northwest (Map 1 of 5)	2-5
Figure 2.2-2	Project Alignment: Segment A Central Portion (Map 2 of 5).....	2-6
Figure 2.2-3	Project Alignment: Segment A Northern Portion and Segment B (Map 3 of 5)	2-7
Figure 2.2-4	Project Alignment: Segment C (Map 4 of 5)	2-8
Figure 2.2-5	Project Alignment: Segment D (Map 5 of 5)	2-9
Figure 2.2-6	Project Alignment: Encina Hub.....	2-10
Figure 2.2-7	Project Alignment: Mission—San Luis Rey Phase Transposition Locations.....	2-11
Figure 2.2-8	Diagram of Proposed 69-kV TSP	2-13
Figure 2.2-9	Diagram of Proposed 138-kV TSP	2-14
Figure 2.2-10	Diagram of Proposed 230-kV Tangent Double-Circuit TSP.....	2-15
Figure 2.2-11	Diagram of Proposed 69-kV Single-Circuit Transition Cable Pole	2-16
Figure 2.2-12	Diagram of Proposed 230-kV Double-Circuit Transition Cable Pole.....	2-17
Figure 2.2-13	Diagram of Proposed 138-kV Steel H-Frame Pole with Distribution Underbuild	2-18
Figure 2.2-14	Representative Photographs of Concrete Pier and Micropile Foundations.....	2-19
Figure 2.2-15	Representative Photograph of Bundled Conductor	2-21
Figure 2.2-16	Typical Splice Vault.....	2-22

TABLE OF CONTENTS

Figure 2.2-17 Transmission Line Segment A Existing Lattice Tower with H-Frame and Proposed Configuration 2-23

Figure 2.2-18 Transmission Line Segment A Existing Tubular Steel Pole with H-Frame and Proposed Configuration 2-24

Figure 2.2-19 Typical Topped H-Frame Structure 2-26

Figure 2.2-20 Diagram of Typical Transmission Line Segment B Duct Bank 2-28

Figure 2.2-21 Transmission Line Segment C Existing and Proposed Configurations 2-30

Figure 2.2-22 Transmission Line Segment D Existing and Proposed Configurations 2-33

Figure 2.3-1 Proposed Project Staging Yards and Substation Storage Locations 2-39

Figure 2.3-2 Typical Retaining Wall Face 2-43

Figure 3.5-1 Cable Pole Alternatives Retained for EIR Analysis 3-19

Figure 3.5-2 Routing Alternatives Retained for EIR Analysis (Alternatives 3, 4, and 5) 3-25

Figure 3.5-3 Diagram of 69-kV Cable Pole 3-30

Figure 3.5-4 Diagram of a 69-kV Double Circuit Underground Duct Bank..... 3-31

Figure 3.5-5 No Project Alternative 3-39

Figure 3.6-1 Eliminated Cable Pole Relocation Alternatives (Alternatives 6 and 7) 3-48

Figure 3.6-2 Eliminated Pole Relocation Alternatives (Alternatives 8 and 9) 3-50

Figure 3.6-3 Eliminated Routing Alternatives (North) 3-53

Figure 3.6-4 Eliminated Routing Alternatives (South) 3-54

Figure 3.6-5 Electrical System Alternative Corridors 3-65

Figure 4.1-1 Biological Survey Area for the Proposed Project 4.1-4

Figure 4.1-2 Critical Habitat within the Proposed Project Vicinity..... 4.1-27

Figure 4.1-3 Preserve Area within the Proposed Project Vicinity..... 4.1-28

Figure 4.1-4 Construction Access Road Restrictions within Segment C of the Proposed Project 4.1-71

Figure 4.2-1 Landscape Character Units 4.2-6

Figure 4.2-2 Law of Reflection 4.2-23

Figure 4.2-3 Photo-Simulation of Proposed Project Construction 4.2-27

Figure 4.2-4 Key Observation Points 4.2-31

Figure 4.2-5 KOP 1 – Baseline Photo (Before Proposed Project) – View from Stonebridge Athletic Field Looking Northwest 4.2-32

Figure 4.2-6 KOP 1 – Photosimulation (After Proposed Project) – View from Stonebridge Athletic Field Looking Northwest 4.2-33

Figure 4.2-7 KOP 2 – Baseline Photo (Before Proposed Project) – View from Angelique Street Looking Southwest 4.2-34

Figure 4.2-8 KOP 2 – Photosimulation (After Proposed Project) – View from Angelique Street Looking Southwest 4.2-35

Figure 4.2-9 KOP 3 – Baseline Photo (Before Proposed Project) – View from Los Peñasquitos Canyon Preserve Trans County Trail Looking North 4.2-36

Figure 4.2-10 KOP 3 – Photosimulation (After Proposed Project) – View from Los Peñasquitos Canyon Preserve Trans County Trail Looking North..... 4.2-37

Figure 4.2-11 KOP 4 – Baseline Photo (Before Proposed Project) – View from Quinton Road Looking Southeast 4.2-38

Figure 4.2-12 KOP 4 – Photosimulation (After Proposed Project) – View from Quinton Road Looking Southeast 4.2-39

Figure 4.2-13 KOP 5 – Baseline Photo (Before Proposed Project) – View from Bassmore Drive Looking Northwest 4.2-40

Figure 4.2-14 KOP 5 – Photosimulation (After Proposed Project) – View from Bassmore Drive Looking Northwest 4.2-41

Figure 4.2-15 KOP 6 – Baseline Photo (Before Proposed Project) – View from Black Mountain Open Space Park Trail Looking Northwest..... 4.2-42

TABLE OF CONTENTS

Figure 4.2-16 KOP 6 – Photosimulation (After Proposed Project) –
View from Black Mountain Open Space Park Trail Looking Northwest..... 4.2-43

Figure 4.2-17 KOP 7 – Baseline Photo (Before Proposed Project) –
View from Maler Road Looking Northwest 4.2-44

Figure 4.2-18 KOP 7 – Photosimulation (After Proposed Project) –
View from Maler Road Looking Northwest 4.2-45

Figure 4.2-19 KOP 8 – Baseline Photo (Before Proposed Project) –
View from Black Mountain Ranch Park Looking North-Northwest 4.2-46

Figure 4.2-20 KOP 8 – Photosimulation (After Proposed Project) –
View from Black Mountain Ranch Park Looking North-Northwest 4.2-47

Figure 4.2-21 KOP 9 – Baseline Photo (Before Proposed Project) –
View from Del Mar Mesa Preserve Trails at Peñasquitos
Junction Looking North 4.2-48

Figure 4.2-22 KOP 9 – Photosimulation (After Proposed Project) –
View from Del Mar Mesa Preserve Trails at Peñasquitos Junction
Looking North 4.2-49

Figure 4.2-23 KOP 10 – Baseline Photo (Before Proposed Project) –
View from Del Mar Mesa Preserve Trail Looking Southwest 4.2-50

Figure 4.2-24 KOP 10 – Photosimulation (After Proposed Project) –
View from Del Mar Mesa Preserve Trail Looking Southwest 4.2-51

Figure 4.2-25 KOP 11 – Baseline Photo (Before Proposed Project) –
View from LPCP Trail Looking West-Northwest 4.2-52

Figure 4.2-26 KOP 11 – Photosimulation (After Proposed Project) –
View from LPCP Trail Looking West-Northwest 4.2-53

Figure 4.2-27 KOP 12 – Baseline Photo (Before Proposed Project) –
View from Gablewood Way Looking East-Northeast 4.2-54

Figure 4.2-28 KOP 12 – Photosimulation (After Proposed Project) –
View from Gablewood Way Looking East-Northeast 4.2-55

Figure 4.2-29 KOP 13 – Baseline Photo (Before Proposed Project) –
View from Heather Run Looking East..... 4.2-56

Figure 4.2-30 KOP 13 – Photosimulation (After Proposed Project) –
View from Heather Run Looking East..... 4.2-57

Figure 4.2-31 KOP 14 – Baseline Photo (Before Proposed Project) –
View from Briarlake Wood Road Looking West-Southwest 4.2-58

Figure 4.2-32 KOP 14 – Photosimulation (After Proposed Project) –
View from Briarlake Wood Road Looking West-Southwest 4.2-59

Figure 4.2-33 KOP 15 – Baseline Photo (Before Proposed Project) –
View from Manorgate Drive Looking East 4.2-60

Figure 4.2-34 KOP 15 – Photosimulation (After Proposed Project) –
View from Manorgate Drive Looking East 4.2-61

Figure 4.3-1 Potential for Buried Cultural Deposits along the
Proposed Project Alignment (1 of 5)..... 4.3-9

Figure 4.3-2 Potential for Buried Cultural Deposits along the
Proposed Project Alignment (2 of 5)..... 4.3-10

Figure 4.3-3 Potential for Buried Cultural Deposits along the
Proposed Project Alignment (3 of 5)..... 4.3-11

Figure 4.3-4 Potential for Buried Cultural Deposits along the
Proposed Project Alignment (4 of 5)..... 4.3-12

Figure 4.3-5 Potential for Buried Cultural Deposits along the
Proposed Project Alignment (5 of 5)..... 4.3-13

Figure 4.3-6 Potential for Buried Cultural Deposits at Encina Hub,
Mission Substation, and San Luis Rey Substation..... 4.3-15

Figure 4.3-7 Potential for Buried Cultural Deposits at Mission –
San Luis Rey Phase Transposition Work Areas..... 4.3-16

TABLE OF CONTENTS

Figure 4.3-8 Potential for Buried Cultural Deposits along Underground Portion of Alternative 3 (1 of 2) 4.3-45

Figure 4.3-9 Potential for Buried Cultural Deposits along Underground Portion of Alternative 3 (2 of 2) 4.3-46

Figure 4.3-10 Alternative 4 Potential for Buried Cultural Deposits along Carmel Mountain Road and East Ocean Air Drive 4.3-51

Figure 4.3-11 Potential for Buried Cultural Deposits along Alternative 5 (1 of 3) 4.3-57

Figure 4.3-12 Potential for Buried Cultural Deposits along Alternative 5 (2 of 3) 4.3-58

Figure 4.3-13 Potential for Buried Cultural Deposits along Alternative 5 (3 of 3) 4.3-59

Figure 4.4-1 Paleontological Sensitivity of the Proposed Project Alignment..... 4.4-3

Figure 4.4-2 Paleontological Sensitivity of the Encina Hub, Mission Substation, and San Luis Rey Substation 4.4-4

Figure 4.4-3 Paleontological Sensitivity of Mission—San Luis Rey Phase Transposition Work Areas 4.4-5

Figure 4.4-4 Alternative 1 Paleontological Sensitivity..... 4.4-19

Figure 4.4-5 Alternative 2 Paleontological Sensitivity..... 4.4-21

Figure 4.4-6 Paleontological Sensitivity of Alternative Alignments 4.4-25

Figure 4.5-1 Geologic Units in the Proposed Project Area (Transmission Corridor and Staging Yards)..... 4.5-3

Figure 4.5-2 Geologic Units in the Proposed Project Area (Encina Hub) 4.5-4

Figure 4.5-3 Geologic Units in the Proposed Project Area (Mission—San Luis Rey Phase Transposition) 4.5-5

Figure 4.5-4 Soil Units in the Proposed Project Area (Map 1 of 3) 4.5-11

Figure 4.5-5 Soil Units in the Proposed Project Area (Map 2 of 3) 4.5-12

Figure 4.5-6 Soil Units in the Proposed Project Area (Map 3 of 3) 4.5-13

Figure 4.5-7 Major Faults in the Proposed Project Region..... 4.5-16

Figure 4.5-8 Mineral Resource Classifications Near the Proposed Project 4.5-21

Figure 4.5-9 Geologic Units of Alternative 3 Alignment..... 4.5-49

Figure 4.5-10 Soil Units of Alternative 3 Alignment..... 4.5-51

Figure 4.5-11 Geologic Units of Alternative 4 Alignment..... 4.5-60

Figure 4.5-12 Soil Units of Alternative 4 Alignment..... 4.5-61

Figure 4.5-13 Geologic Units of Alternative 5 Alignment..... 4.5-71

Figure 4.5-14 Soil Units of Alternative 5 Alignment..... 4.5-73

Figure 4.6-1 Watersheds in the Proposed Project Area..... 4.6-4

Figure 4.6-2 Surface Waters in the Proposed Project Area..... 4.6-7

Figure 4.6-3 FEMA Flood Zones in the Proposed Project Area..... 4.6-8

Figure 4.6-4 Groundwater Basins in the Proposed Project Vicinity 4.6-12

Figure 4.6-5 FEMA Flood Zones in the Project Alternative Areas..... 4.6-46

Figure 4.6-6 Surface Waters in the Project Alternative Areas..... 4.6-47

Figure 4.6-7 Surface Waters in the No Project Alternative Area 4.6-67

Figure 4.7-1 Traffic Count Locations (1 of 3)..... 4.7-5

Figure 4.7-2 Traffic Count Locations (2 of 3)..... 4.7-6

Figure 4.7-3 Traffic Count Locations (3 of 3)..... 4.7-7

Figure 4.7-4 Airports in the Proposed Project Vicinity 4.7-9

Figure 4.7-5 Bikeways in the Vicinity of the Proposed Project (Map 1 of 4) 4.7-11

Figure 4.7-6 Bikeways in the Vicinity of the Proposed Project (Map 2 of 4) 4.7-12

Figure 4.7-7 Bikeways in the Vicinity of the Proposed Project (Map 3 of 4) 4.7-13

Figure 4.7-8 Bikeways in the Vicinity of the Proposed Project (Map 4 of 4) 4.7-14

Figure 4.7-9 Transit in the Vicinity of the Proposed Project (Map 1 of 4) 4.7-18

Figure 4.7-10 Transit in the Vicinity of the Proposed Project (Map 2 of 4) 4.7-19

Figure 4.7-11 Transit in the Vicinity of the Proposed Project (Map 3 of 4) 4.7-20

Figure 4.7-12 Transit in the Vicinity of the Proposed Project (Map 4 of 4) 4.7-21

Figure 4.7-13 Traffic Count Locations for Project Alternatives 3, 4, and 5 4.7-64

Figure 4.7-14 Bikeways in the Vicinity of Project Alternatives 3, 4, and 5..... 4.7-65

TABLE OF CONTENTS

Figure 4.7-15 Transit in the Vicinity of Project Alternatives 3, 4, and 5..... 4.7-66

Figure 4.8-1 Noise Survey Locations..... 4.8-5

Figure 4.8-2 Noise-Sensitive Receptors near the
Proposed Project Transmission Alignment (1 of 5) 4.8-7

Figure 4.8-3 Noise-Sensitive Receptors near the
Proposed Project Transmission Alignment (2 of 5) 4.8-8

Figure 4.8-4 Noise-Sensitive Receptors near the
Proposed Project Transmission Alignment (3 of 5) 4.8-9

Figure 4.8-5 Noise-Sensitive Receptors near the
Proposed Project Transmission Alignment (4 of 5) 4.8-10

Figure 4.8-6 Noise-Sensitive Receptors near the
Proposed Project Transmission Alignment (5 of 5) 4.8-11

Figure 4.8-7 Sensitive Receptors within 1,000 feet of Alternative 3 (Map 1) 4.8-51

Figure 4.8-8 Sensitive Receptors within 1,000 feet of Alternative 3 (Map 2) 4.8-52

Figure 4.8-9 Sensitive Receptors within 1,000 feet of Alternative 4..... 4.8-59

Figure 4.8-10 Sensitive Receptors within 1,000 feet of Alternative 5 (Map 1) 4.8-67

Figure 4.8-11 Sensitive Receptors within 1,000 feet of Alternative 5 (Map 2) 4.8-68

Figure 4.8-12 Sensitive Receptors within 1,000 feet of Alternative 5 (Map 3) 4.8-69

Figure 4.9-1 Land Use Designations in the Proposed Project
Transmission Alignment Vicinity..... 4.9-3

Figure 4.9-2 Land Use Designations in Other Proposed Project Areas..... 4.9-4

Figure 4.10-1 Recreational Areas in the Proposed Project Vicinity and
Surrounding Region (Map 1 of 4) 4.10-3

Figure 4.10-2 Recreational Areas in the Proposed Project Vicinity and
Surrounding Region (Map 2 of 4) 4.10-4

Figure 4.10-3 Recreational Areas in the Proposed Project Vicinity and
Surrounding Region (Map 3 of 4) 4.10-5

Figure 4.10-4 Recreational Areas in the Proposed Project Vicinity and
Surrounding Region (Map 4 of 4) 4.10-6

Figure 4.10-5 Recreational Areas in the Vicinity of Project Alternatives 3, 4, and 5
(Map 1 of 2) 4.10-41

Figure 4.10-6 Recreational Areas in the Vicinity of Project Alternatives 3, 4, and 5
(Map 2 of 2) 4.10-42

Figure 4.10-7 Recreational Areas in the Vicinity of the No Project Alternative 4.10-59

Figure 4.11-1 Open Hazardous Sites within 0.25 Mile of the Proposed Project 4.11-6

Figure 4.11-2 Open Hazardous Sites within 0.25 Mile of Alternative 5..... 4.11-69

Figure 4.11-3 Location of MCAS Miramar in Relation to the No Project Alternative 4.11-80

Figure 4.12-1 Fire Hazard Severity Zones for Proposed Project Transmission Alignment..... 4.12-3

Figure 4.12-2 Fire Hazard Severity Zones for Other Proposed Project Areas 4.12-4

Figure 4.12-3 Firehatched Boundaries..... 4.12-8

Figure 4.12-4 Wildfire Events in Proposed Project Area Since 1940 4.12-10

Figure 4.12-5 Fire Behavior Trend Model Results for the Proposed Project..... 4.12-21

Figure 4.12-6 Fire Behavior Trend at Encina Hub 4.12-23

Figure 4.12-7 Wildfire Containment Conflict Model..... 4.12-25

Figure 4.12-8 Firehatched Areas for the Proposed Project Alternatives..... 4.12-34

Figure 4.15-1 Agricultural Resources in the Proposed Project Vicinity and
Surrounding Region (Map 1 of 4) 4.15-4

Figure 4.15-2 Agricultural Resources in the Proposed Project Vicinity and
Surrounding Region (Map 2 of 4) 4.15-5

Figure 4.15-3 Agricultural Resources in the Proposed Project Vicinity and
Surrounding Region (Map 3 of 4) 4.15-6

Figure 4.15-4 Agricultural Resources in the Proposed Project Vicinity and
Surrounding Region (Map 4 of 4) 4.15-7

TABLE OF CONTENTS

Figure 4.17-1 Locations of Fire Stations, Police Stations, and Hospitals near the Proposed Project Area 4.17-6

Figure 4.17-2 Locations of Fire Stations, Police Stations, and Hospitals near the _VProposed Project Area 4.17-7

Figure 5.2-1 Cumulative Projects near the Proposed Project..... 5-13

Figure 5.2-2 Cumulative Projects Near Ancillary Work Areas 5-15

Figure 5.3-1 Segment D Representative View – Existing Conditions..... 5-23

Figure 5.3-2 Segment D Representative View – Cumulative Impact..... 5-24

Figure 5.4-1 Cumulative Projects near Project Alternatives..... 5-63

Figure 7.1-1 Electromagnetic Spectrum 7-3